

What is claimed:

1 1. Electromechanical valve control actuator for internal combustion engines,
2 comprising a electromagnet (200, 300, 400, 500, 600, 700, 1006) with a magnet (202,
3 204, 206, 302, 402, 502, 702, 1001, 1002) and with a mobile magnetic plate (210, 310,
4 610, 710) moving into the vicinity of the electromagnet, the magnet (202, 204, 206, 302,
5 402, 502, 702, 1001, 1002) being located on a surface of the electromagnet (200, 300,
6 400, 500, 600, 700, 1006) opposite the plate (210, 310, 610, 710), characterized in that
7 the electromagnet (200, 300, 400, 500, 600, 700, 1006) comprises a E-shaped magnetic
8 circuit (208, 304, 404, 602, 704), and the magnet (202, 204, 206, 302, 402, 502, 702,
9 1001, 1002) being located at the end of a branch of the E-shaped circuit.

1 2. Actuator in accordance with claim 1, characterized in that a rod is an
2 integral part of the plate, the rod being located outside the E-shaped circuit.

1 3. Actuator in accordance with claim 1 or 2, characterized in that a plurality of
2 branches of the circuit are equipped with a magnet.

1 4. Actuator in accordance with claim 1, 2 or 3, characterized in that at least
2 one said magnet has a cross section (S_a) larger than the cross section ($2S_c$) of the branch
3 on which it is located.

1 5. Actuator in accordance with one of the claims 1 through 4, characterized in
2 that the plate (610) has a cross section (S_p) that is smaller than the cross section (S_e) of
3 the end branches (606) of the E-shaped support.

1 6. Actuator in accordance with one of the claims 1 through 5, characterized in
2 that the cross section (S_e) of an end branch of the support is smaller than half the cross
3 section ($2S_c$) of the central branch of the support.

1 7. Actuator in accordance with one of the claims 1 through 6, characterized in
2 that the cross section (S_e) of the junction between an end branch of the support and the
3 central branch of the E-shaped support is smaller than half the cross section ($2S_c$) of the
4 central branch of the support.

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1 8. Internal combustion engine comprising an electromechanical valve control
2 actuator equipped with an electromagnet with a magnet and with a mobile magnetic plate
3 coming into the vicinity of the electromagnet, characterized in that the actuator is in
4 accordance with one of the claims 1 through 7.